REMARKS/ARGUMENTS

This Amendment is being filed concurrently with applicants' RCE.

Claims 16 to 31 and 38 to 46, which were withdrawn due to a restriction requirement issued May 16, 2006, and deemed to be final in the Office Action dated July 12, 2006, are now canceled. Applicants reserve the right to file one or more divisional applications as provided for under 35 U.S.C. § 121.

In the Office Action, the Patent Office rejected claims 1 to 9 and 32 to 37 under 35 U.S.C. § 112, first paragraph, as allegedly being broader than the enabling disclosure (referring to paragraph 4 of the Office Action dated November 20, 2006); rejected claims 1 to 9 and 32 to 37 under 35 U.S.C. § 102(b) as allegedly being fully met by Hasegawa et al (US6280898) or Sato et al (US2002/0098440) (referring to paragraph 7 of the Office Action dated March 2, 2007); and rejected claims 1 to 9 and 32 to 37 under 35 U.S.C. § 102(e) as allegedly being fully met by Nishimura et al (US6800414) (referring to paragraph 8 of the Office Action dated March 2, 2007). These rejections are traversed for the reasons set forth below.

Applicants incorporate by reference their comments from their June 14, 2007, Amendment.

In the present Office Action, the Patent Office referred to paragraph 4 from the prior final Office Action, which in turn referred to paragraph 4 from the first Office Action. Therein, the Patent Office stated because the specification, while being enabling for polymer containing antireflection layers, does not reasonably provide enablement for

antireflection layers with only basic compounds. The Patent Office has not made out a prima facie case for this rejection and it is traversed.

When rejecting a claim under the enablement requirement of 35 U.S.C. §112, the Patent Office bears an initial burden of setting forth a reasonable explanation as to why it believes that the scope of protection provided by that claim is not adequately enabled by the description of the invention provided in the specification. This includes, of course, providing sufficient evidence or scientific reasons for doubting any assertions or objective truths in the specification as to the scope of enablement. The first paragraph of 35 U.S.C. § 112 requires nothing more than an objective enablement. How such teaching is set forth, either by use of illustrative examples or by broad terminology, is irrelevant.

A specification disclosure which contains a teaching of the manner and process of making and using the invention in terms which correspond in scope to those used in describing and defining the subject matter sought to be patented must be taken as in compliance with the enabling requirement of the first paragraph of 35 U.S.C. § 112 unless there is reason to doubt the objective truth of the statements contained therein which must be relied on for enabling support.

It is incumbent upon the Patent Office, whenever a rejection under the first paragraph of 35 U.S.C. § 112 is made, to explain why it doubts the truth or accuracy of any statement in a supporting disclosure and to back up assertions of its own with acceptable evidence or scientific reasoning which is inconsistent with the contested statement and clearly and fully explain why one of ordinary skill in the art would not have been able to make and use the full scope of the subject matter claimed based on

the written description of the invention in the specification without undue experimentation.

The Patent Office has not provided any evidence or reasoning which is inconsistent with the explanation and guidance provided by applicants as to how the disclosure is in fact enabling for claims 1 to 9 and 32 to 37. As such, the Patent Office has not met its burden of setting forth a reasonable explanation as to why it believes that the scope of protection provided by the claims is not adequately enabled by the description of the invention as provided for in the specification since it not provided any evidence or scientific reasoning that doubts any assertions or objective truths in applicants' specification.

Enablement requires that the specification teach those in the art to make and use the invention without 'undue experimentation'. That some experimentation may be required is not fatal; the issue is whether the amount of experimentation required is 'undue'. As those skilled in the art will appreciate, the specification provides materials and the process for making and using the antireflective coating compositions (specification, page 3, line 28 to page 4, line 8; page 7, lines 4 to 15; page 11, line 15 to page 12, line 11). Since applicants' specification contains a written description of the suitable materials and the process for making and using the antireflective coating compositions corresponding with the scope of the pending claims, compliance with the enablement requirement is presumed.

The Patent Office has failed to explain why applicants' specification would not have been suitable for a person of ordinary skill in the art to practice the full scope of the claimed subject matter. The Patent Office has simply concluded that the specification is

not sufficient to support the claimed invention without any factual evidence or scientific evidence to support its position.

The current Office Action merely points out that the "specification fails to disclose how to use and coat compositions as encompassed by the instant claims without polymers and absorbers." This is just a conclusion without sufficient evidence or any scientific reasoning provided to support such a conclusion.

Whether a claimed invention is enabled is not a single, simple factual determination, but rather is a conclusion reached by weighing many factual considerations. To assist the Patent Office in meeting its initial burden, a number of factors that should be considered are set forth in MPEP §2164.01(a). The factors to be considered in determining whether a claimed invention is enabled throughout its scope without undue experimentation include the quantity of experimentation necessary, the amount of direction or guidance presented, the presence or absence of working examples, the nature of the invention, the state of the prior art, the relative skill of those in the art, the predictability or unpredictability of the art, and the breadth of the claims.

The Patent Office has provided no analysis of these factors. In fact, the Patent Office has not set forth a reasonable explanation as to why it believes that the scope of applicants' claims is not adequately enabled by applicants' specification. Instead, only the Patent Office's unsupported conclusions as to why the specification does not enable the claimed invention are mentioned. As stated above, is incumbent upon the Patent Office, whenever a rejection on this basis is made, to explain why it doubts the truth or accuracy of any statement in a supporting disclosure and to back up assertions of its own with acceptable evidence or reasoning which is inconsistent with the contested

statement. Otherwise, there would be no need for applicants to go to the trouble and expense of supporting their presumptively accurate disclosure.

The Patent Office fails to understand that in a rejection under 35 U.S.C. § 112, first paragraph, the Patent Office must take into account various factors such as the nature of the invention, the predictability of the art, and the relative skill of persons in the art. For example, the Patent Office argues that how to use and coat compositions as encompassed by the instant claims without polymers and absorbers are not disclosed in the specification. The Patent Office appears to be of the opinion that that any knowledge in the prior art needed to establish enablement must be recited in the specification. This is not correct. It has been well established that a patent need not teach, and preferably omits, what is well known in the art. Stated another way, a patent applicant need not include in the specification that which is already known to and available to the public.

The test of enablement is whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent coupled with information known in the art without undue experimentation. Determining what the specification fails to explicitly set forth is, at best, only a first step in demonstrating that a disclosure is not enabling. Determining whether "undue experimentation" is required involves weighing factors beyond what the specification explicitly sets forth.

The Patent Office has also failed to consider and appreciate that applicants have proffered evidence that reflects antireflective coating compositions. The term antireflective coating composition in itself contains polymers, binders and other components that make it work. The documents that applicants have incorporated by reference demonstrate how to use and coat antireflective coating compositions that are the object of applicants' invention.

The Patent Office is complaining that the full description of antireflective coating composition does not contain polymers and absorbers but that is incorrect. It is well settled that the disclosure of an application embraces not only what is expressly set forth in words or drawings, but what would be understood by persons skilled in the art. An applicant may begin at the point where his invention begins, and describe what he has made that is new and what it replaces of the old. That which is common and well known is as if it were written out in the patent. Those components that make up antireflective coating compositions are well known to the skilled artisan and applicants have gone further by incorporating by reference sufficient evidence that reflect antireflective coating compositions. See page 3, line 28 to page 4, line 8 of applicants' specification. While the specification must enable the skilled artisan to practice the full scope of the claimed subject matter, the specification need not necessarily describe how to make and use every possible variant of the claimed invention, for the artisan's knowledge of the prior art and routine experimentation can often fill gaps, interpolate between embodiments, and perhaps even extrapolate beyond the disclosed embodiments.

Applicants' specification provides that antireflective coating compositions are well known in the art. A person skilled in the pertinent art would know how to make and use the claimed invention without undue experimentation. One skilled in the art would have known the background and the makeup of antireflective coating compositions. The experimentation required to identify antireflective coating compositions would not have been undue.

Applicants' invention is that an antireflective coating composition has a base which is not soluble in a solvent of a photoresist composition used with the antireflective coating composition. The word composition denotes other materials and the composition has been clearly explained in applicants' application and clearly understood by the skilled artisan.

See for example, page 3, line 28 to page 4, line 8; page 7, lines 4 to 15; page 11, line 15 to page 12 line 11. There is clear support for antireflective coating composition as mentioned above for the claims. The Patent Office has not provided any factual reasoning or scientific evidence to demonstrate otherwise.

The Patent Office has not explained why one skilled in the art, reading the disclosure of Appellant's specification plus the scope of what would have been known to the skilled artisan, would have required undue experimentation to make and use applicants' invention as presently claimed. It is well established that even a broad claim can be enabled by disclosure of a single embodiment.

In the absence of a fact-based statement of a rejection based upon the relevant legal standards, the Patent Office has not sustained its initial burden of establishing a prima facie case of non-enablement. A disclosure which contains representative examples which provide reasonable assurance to one of ordinary skill in the art that the compounds falling within the scope of the claim can be made and possess utility is all that is required, absent any scientific reasons or evidence given by the Patent Office to doubt the accuracy of applicants' statements in the specification. The Patent Office has not adequately considered and explained the state of the prior art, the nature of the invention, the working examples and the amount of guidance presented in the specification to support any conclusion that applicants' claims are not enabled. The Patent Office has not provided any scientific reasoning or factual evidence to support its conclusion of non-enablement.

The Patent Office has not sustained its burden of establishing a prima facie case of non-enablement. The statement of the rejection is plainly deficient. The rejection under 35 U.S.C. § 112, first paragraph, is traversed and withdrawal thereof is requested.

Also in the Office Action, the Patent Office rejected claims 1 to 9, 11 to 15, and 32 to 37 under 35 U.S.C. § 102(b) as allegedly being fully met by Hasegawa et al. or Sato et al. The Patent Office stated that Hasegawa et al. disclose coating compositions with polymers, photoacids, and basic amine compounds. The Patent Office stated that the layers would inherently reduce reflection if used as an underlayer to some extent. There is no basis for the Patent Office's statement that the layers would inherently reduce reflection if used as an underlayer to some extent. The Hasegawa et al. compositions are photoresist compositions which, in practice, are coated over antireflective coating compositions.

Hasegawa et al. require that their basic compound be soluble in the photoresist solvent ("The organic solvent used herein may be any organic solvent in which the base resin, photoacid generator, and other components are soluble."; column 21, lines 41 to 43; emphasis added), which is the opposite of applicants' invention. Applicants do not want the base in their antireflective coating compositions to be soluble in the solvent of the photoresist composition coated thereover. There is no teaching or suggestion in Hasegawa et al. to convert the photoresist composition to an antireflective coating composition and then coat the antireflective coating composition with the photoresist composition with the base in the antireflective coating not being soluble in the solvent of the photoresist coating. Hasegawa et al. require the components of its photoresist composition to be soluble in the solvent that they use. Where is the disclosure in Hasegawa et al. to now somehow convert their photoresist composition to an antireflective coating composition, then use the so-called antireflective coating composition with its photoresist composition, and not have the base soluble in the solvent of the photoresist composition thereof? There is none and the Patent Office has not made any demonstration thereof through factual evidence or scientific reasoning.

The same is true for Sato et al. Sato et al. state in paragraph [0111] (emphasis added) that "[t]he compositions of the present invention are dissolved in solvents dissolving the above-mentioned respective components, and applied onto supports.", which is the opposite of what applicants' invention. Applicants do not want the base in their antireflective coating compositions to be soluble in the solvent of the photoresist composition coated thereover. The Patent Office stated that Sato et al. disclose halation inhibitors, but they are for use in Sato et al.'s photoresist compositions. Sato et al. require the components of its photoresist composition to be soluble in the solvent that they use. Where is the disclosure in Sato et al. to now somehow convert their photoresist composition to an antireflective coating composition, then use the so-called antireflective coating composition with its photoresist composition, and not have the base soluble in the solvent of the photoresist composition thereof? There is none and the Patent Office has not made any demonstration thereof through factual evidence or scientific reasoning.

For a § 102(b) rejection to be proper, the Patent Office must demonstrate that the applied prior art clearly and unequivocally describes each and every element of a claimed invention, without any need for picking, choosing, and combining various disclosures therein. When the Patent Office relies upon a theory of inherency, the Patent Office must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art. The prior art must make clear that the missing descriptive matter is necessarily present in the thing described in the prior art, and that it would be so recognized by persons of ordinary skill. It is well known that inherency requires that the missing descriptive material be necessary present and cannot be established or based on conjecture and/or probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.

Claims 1 to 9 and 32 to 37 require an antireflective coating composition that contains a base that is not soluble in the solvent of the photoresist with which the antireflective coating composition is used. Thus, Hasegawa et al. or Sato et al. must meet this limitation in order to establish a prima facie case of anticipation. In order to show that the compositions of Hasegawa et al. or Sato et al. inherently meet the limitation, the Patent Office must establish by factual evidence or scientific reasoning that such limitation is necessarily present in the composition of Hasegawa et al. or Sato et al. and that it would be recognized as such by one of ordinary skill in the art. the mere fact that a certain thing might result from a given set of circumstances is not sufficient. The Patent Office's statement that the layers would inherently reduce reflection if used as an underlayer to some extent is insufficient as this is just a possibility or probability that something might result. This statement is not supported by any factual evidence or scientific reasoning and thus is not sufficient to justify or support a rejection of anticipation.

The Patent Office stated in the Office Action that the intended use of the compositions in the present application do not materially distinguish them from the compositions of Hasegawa et al. or Sato et al. and goes on to say that the compositions of Hasegawa et al. or Sato et al. being materially the same as those encompassed by the claims, would have the same properties.

However, the Patent Office has not articulated how the compositions of Hasegawa et al. or Sato et al. would function as an antireflective coating composition having a base that is not soluble in the solvent of a photoresist composition with which it is used. The Patent Office has not demonstrated that Hasegawa et al. or Sato et al. teach an antireflective coating composition that has a base that is not soluble in the solvent of a photoresist composition with which it is used. The Patent Office has not

established with sufficient specificity how either Hasegawa et al. or Sato et al. substantially corresponds to each claim feature to support any inference that Hasegawa et al. or Sato et al. meet the claim features of applicants' invention. In fact, both Hasegawa et al. and Sato et al. each require that the components in their photoresist compositions be soluble in the photoresist solvent used in their respective photoresist compositions. Neither Hasegawa et al. nor Sato et al. teach, disclose, or suggest to the skilled artisan how to convert their photoresist compositions to antireflective coating compositions.

The Patent Office has not shown where either Hasegawa et al. or Sato et al. provides any disclosure of an antireflective coating composition with a base that is not soluble in the solvent of a photoresist with which it is used. Moreover, the Patent Office has not provided any persuasive rationale as to why one of ordinary skill in the art would have been led to convert the photoresist compositions of Hasegawa et al. or Sato et al. to antireflective coating compositions and then use the antireflective coating composition allegedly converted therein with the photoresist composition therein, where the antireflective coating composition has a base which is not soluble in the solvent of the photoresist composition.

The Patent Office has not met the burden of making out a prima facie case of anticipation by pointing out where each and every element of the claimed invention, arranged as required by the claim, is described identically in the reference, either expressly or under the principles of inherency. It appears the Patent Office is relying on suggestions of the references to assert the requirements of the present invention are inherently possessed by Hasegawa et al. or Sato et al. Yet, the supposed suggestions in Hasegawa et al. or Sato et al. have not been identified by the Patent Office. As stated before, inherency cannot be based upon probabilities or possibilities.

Suggestions and inferences which could have been derived from a reference are not proper basis for formulating an anticipation rejection under § 102.

Contrary to the Patent Office's statement that applicants' claims only materially require the presence of basic compounds, applicants' claims require that the basic compounds be in an antireflective coating composition that is useful with a photoresist composition and that the base used in the antireflective coating composition is not soluble in a solvent of the photoresist composition.

The Patent Office's view that the compositions of Hasegawa et al. or Sato et al. as being materially the same as those of applicants' claims or the bases disclosed therein would be insoluble in some solvents falls short in establishing a prima facie case of anticipation based on inherency since such view is based on conjecture, probability, or possibility. The Patent Office has not provided any support, by way of identifying text in either Hasegawa et al. or Sato et al., that the compositions of either are materially the same as applicants. Thus, the Patent Office has not established that Hasegawa et al. or Sato et al. anticipate an antireflective coating composition that has a base that is not soluble in the solvent of a photoresist composition with which it is used as claimed by applicants.

The Patent Office also stated that the bases (of Hasegawa et al and Sato et al?) would be insoluble in some solvents. However, the Patent Office provides no factual evidence or scientific reasoning for such a statement. And as stated above, both Hasegawa et al and Sato et al contradict the Patent Office in that they both require that the components of their system be soluble in the solvents therein.

The Patent Office also stated that the claims do not specify particular solvents. Applicants have specified that the base in the antireflective coating is not soluble in the solvent of the photoresist composition. The Patent Office has not provided a basis for requiring applicants to particularly identify the solvents as a functional description of the solvent (a photoresist solvent) and its relation to the base (the base is not soluble in the photoresist solvent), the correlation of solubility being shown in applicants' specification (see page 4, lines 10 -19; page 5, lines 11 - 15; page 6, lines 14 - 31; page 7, lines 4 - 15; page 8, lines 14 - 31; and page 9, line 1 to page 11, line 13). Applicants specify that the base is not soluble in the solvent of the photoresist composition. There is sufficient guidance to the skilled artisan. Nothing more need be stated.

The dispositive question is whether one skilled in the art would reasonably understand or infer from the teachings of either Hasegawa et al or Sato et al that every claim element is disclosed therein. Hasegawa et al teach that components in its system are soluble in the organic solvent used therein. Hasegawa et al make no mention of antireflective coatings and its use with photoresist compositions. Hasegawa et al make no mention that the base in antireflective coatings is not soluble in the solvent of the photoresist compositions. Sato et al teach that the compositions therein are dissolved in solvents which dissolve the components therein. Sato et al make no mention of antireflective coatings and its use with photoresist compositions. Hasegawa et al make no mention that the base in antireflective coatings is not soluble in the solvent of the photoresist compositions. Hasegawa et al or Sato et al do not teach, in a manner reasonably understandable or inferable by one skilled in the art, an antireflective coating composition used with a photoresist composition where the antireflective coating composition has at least one base which is not soluble in a solvent of the photoresist composition. The Patent Office provides no factual evidence or scientific reasoning or citations in Hasegawa et al or Sato et al to state otherwise.

See also remarks related to Nishimura et al discussed below.

The rejection of claims 1 to 9, 11 to 15, and 32 to 37 over either Hasegawa et al. or Sato et al. is traversed and withdrawal thereof is requested.

Finally in the Office Action, the Patent Office rejected claims 1 to 9, 11 to 15, and 32 to 37 as allegedly being fully met by Nishimura et al.

Like Hasegawa et al. and Sato et al. as discussed above and incorporating the remarks therein, Nishimura et al. require that the components in its photoresist composition be soluble in its solvent ("[t]he radiation-sensitive resin composition of the present invention is prepared as a composition solution by dissolving the composition in a solvent ... ."(column 51, lines 31 to 33)), which is the opposite of applicants' invention. Applicants do not want the base in their antireflective coating compositions to be soluble in the solvent of the photoresist composition coated thereover.

The Patent Office stated that Nishimura et al. disclose halation inhibitors, but they are for use in Nishimura et al.'s photoresist compositions. In fact, Nishimura et al. provide that their photoresist compositions can be used with an additional antireflection film ("In order to bring out latent capability of the radiation-sensitive resin composition of the present invention, an organic or inorganic anti-reflection film may be formed on a substrate as disclosed in Japanese Patent Publication No. 12452/1994, for example."; see column 52, lines 61 to 65). There is nothing in Nishimura et al that discloses that the anti-reflection film contains a base and that if there was a base that it would not be soluble in the solvent of the photoresist composition.

The Patent Office has not met the burden of making out a prima facie case of anticipation by pointing out where each and every element of the claimed invention, arranged as required by applicants' claims, is described identically in Nishimura et al.

The Patent Office stated that the instant claims do not specify particular solvents and the same bases would have the same solubility properties. Applicants state that the base in the antireflective coating composition is not soluble in the solvent of the photoresist composition with which it is used. Applicants do not have to identify each and every solvent. Nishimura et al. indicate that "[t]he radiation-sensitive resin composition of the present invention is prepared as a composition solution by dissolving the composition in a solvent ... ." (column 51, lines 31 to 33; emphasis added). Nowhere do Nishimura et al. state that bases that it uses in the photoresist composition, which are to be dissolved in the composition solvent (see above), are not soluble in the solvent of the photoresist composition.

The Patent Office has to explain where a skilled artisan would read or find such a teaching or suggestion. The Patent Office has not provided any evidence that the bases would have the same solubility properties and is only basing such a conclusion on probabilities or conjecture.

For a document to anticipate a claim, every element of the claimed invention must be literally present, arranged as in the claim. Nishimura et al. do not disclose every element of applicants' claims. For the Patent Office to support its anticipation rejection, the Patent Office has to demonstrate, citing column and line, where in Nishimura et al. is it stated that the base in the antireflective coating composition is not soluble in the solvent of the photoresist composition. The Patent Office has not done so and cannot do so since Nishimura et al. do not make such a statement or assertion. The

anticipation analysis asks solely whether the prior art document discloses and enables the claimed invention. Nishimura et al. fail in both respects.

The Patent Office also stated that the bases (of Nishimura et al?) would be insoluble in some solvents. However, the Patent Office provides no factual evidence or scientific reasoning for such a statement. And as stated above, Nishimura et al contradict the Patent Office in that it requires that the components of their system be soluble in the solvents therein.

The dispositive question is whether one skilled in the art would reasonably understand or infer from the teachings of Nishimura et al that every claim element is disclosed therein. Nishimura et al teach that components in its system are soluble in the organic solvent used therein. Nishimura et al also make no mention of antireflective coatings and its use with photoresist compositions. While Nishimura et al do mention the use of halation inhibitors, it is for inclusion in its photoresist composition, not as a separate antireflective coating composition which is then overcoated by its photoresist composition. Nishimura et al fails to teach, in a manner reasonably understandable or inferable by one skilled in the art, an antireflective coating composition used with a photoresist composition where the antireflective coating composition has at least one base which is not soluble in a solvent of the photoresist composition. The Patent Office provides no factual evidence or scientific reasoning or citations in Hasegawa et al or Sato et al to state otherwise.

As such, the rejection of claims 1 to 9, 11 to 15, and 32 to 37 over Nishimura et al. is traversed and withdrawal thereof is requested.

Applicants submit that the concerns of the Patent Office have been addressed. Withdrawal of the rejections and issuance of a Notice of Allowance is respectfully solicited.

Respectfully submitted,

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